District Deviations Rates Report

What is a maximum deviation?

Utah Code Sections 20A-20-301, 20A-20-302, and 20A-20-303 define deadlines and requirements of this commission. Part 3 of Chapter 20 specifies how maps should be drawn and the maximum deviations that are permitted between districts (1).

In Section 302, maximum deviation is defined as "combining the percentage differences" of the district with the lowest population and the district with the highest population, and comparing it to the target population. For example, if a population being redistricted contained 300 people and the target population for each district is 100 people, district one could contain 95 people, district two 100 people, and district three 105 people while maintaining the maximum mandated 10 percent deviation between the highest and lowest district. See Figure 1 for more potential district populations within this theoretical situation.

District 1	District 2	District 3	Total	Percent Difference
95	100	105	300	10%
95	101	104	300	9%
95	102	103	300	8%
96	102	102	300	6%
97	101	102	300	5%
98	101	101	300	3%
99	100	101	300	2%
100	100	100	300	0%

Figure 1- Example deviations in a hypothetical 300 person district.

What are Utah's maximum deviations?

The statute allows a maximum deviation of 1 percent for congressional districts and 10 percent for state house, senate, and school board districts (1).

However, in the past, the legislative redistricting committee has attained district population deviations well below the codified maximum. The deviations of the 2011 districts are shown in Figure 2:

The deviation in State House districts was 1.55% *
The deviation in State Senate districts was 0.39%*
The deviation in State School Board districts was 0.002%
The deviation in Congressional districts was 0.0004%

*Figure 2- Deviations in 2011 for The State of Utah. *See footnote.*

*These numbers were found on The National Conference of State Legislators website. "The deviations reported by Utah were 0.0% for the house and 0.01% for the senate. However, subsequent review by the state found several instances where local political boundaries were incorrect in the geography files. Deviations based upon updated block assignment files from the Census Bureau are 1.55% for the House and 0.39% for the Senate." (4).

How many people can the commission deviate by?

While census block data (used to draw the maps), has not yet been released, the population of Utah has. According to 2020 census data, Utah saw a population of 3,271,616 (2). Using this data, the maximum deviations for this year's redistricting can be calculated. The State Legislature has also released its redistricting principles with deviation rates they wish to accomplish (3). The 2020 population with these rates are shown in figure 4.

The +/- category is the maximum deviation divided by 2, showing the amount the commission could deviate over and under. For example, with a target population of 1000 and a maximum deviation of 10%, the +/- categories would show 50, meaning the commission could deviate over 50 in one district and under 50 in another.

Figure 3 –All numbers rounded up or down to the nearest integer.

Figure 3 – Maximum deviation rates legally allowed by statute for each district, using the 2020 population.

District	# Of districts	Target population per district	Allowed Deviation (%)	Maximum total deviation (population)	Maximum deviation +/-
Congressional	4	817,904	1%	8,178	4,089
State House	75	43,622	10%	4,361	2,180
State Senate	29	112,814	10%	11,280	5,640
State School Board	15	218,108	10%	21,810	10,905

Figure 3 –All numbers rounded up or down to the nearest integer.

Figure 4 – Deviation rates in The Legislative Redistricting Committee's Redistricting Principles, using the 2020 population.

District	# Of districts	Target population per district	Maximum Deviation Principle (%)	Maximum total deviation (population)	Maximum deviation +/-
Congressional	4	817,904	0.1%	817	408
State House	75	43,622	5%	2,180	1,090
State Senate	29	112,814	5%	5,640	2,820
State School Board	15	218,108	5%	10,904	5,452

Figure 4 –All numbers rounded up or down to the nearest integer. The Legislative Redistricting Committee's Redistricting Principles

Figure 5 – Deviation rates from 2011** shown with 2010 population (2) (Current maps)					
District	**# Of districts**	**Target population per district**	**2010 Redistricting deviation (%)**	**2010 Redistricting deviation (population)**	**Maximum deviation +/-**
Congressional	4	690,971	0.00004%	1	1
State House	75	36,852	1.55%*	571	285
State Senate	29	95,306	0.39%*	371	185
State School Board	15	184,259	0.002%	4	2

Figure 5 – All numbers rounded up or down to the nearest integer.

Figure 6 – Deviation rates from 2011** shown with 2020 population					
District	**# Of districts**	**Target population per district**	**2010 Redistricting deviation (%)**	**2020 Redistricting deviation (population)**	**Maximum deviation +/-**
Congressional	4	817,904	0.00004%	1	1
State House	75	43,622	1.55%*	675	337
State Senate	29	112,814	0.39%*	439	219
State School Board	15	218,108	0.002%	4	2

Figure 6 – All numbers rounded up or down to the nearest integer.

<u>For the commission's reference, tables listing possible deviations for each district group can be found in the appendix.</u>

*These numbers were found on The National Conference of State Legislators website. "The deviations reported by Utah were 0.0% for the house and 0.01% for the senate. However, subsequent review by the state found several instances where local political boundaries were incorrect in the geography files. Deviations based upon updated block assignment files from the Census Bureau are 1.55% for the House and 0.39% for the Senate." (4).

**Deviation rates from maps adopted in 2011, created using 2010 census data.

1 person 1 vote vs. communities

Achieving low deviations may prevent some communities, cities, and counties from remaining in the same district. In 2011, there were several instances of neighborhoods/cities being split into multiple districts, which may have occurred in part to achieve a better deviation. Additionally, annexations within the last 10 years may have changed the boundary lines of various cities as Utah continues to grow more densely populated in many areas.

Figure 7 and 8 show the before and after maps and popultion after keeing a naigborhood in tact. Figure 7 is the current 2011 map and population, while figure 8 shows a hypothetical map and population. The yellow line represents Vinyard city limits.

Current map of HD 59 and 60

<u>District 59 population:</u>

36,748 or 104 under target

<u>District 60 population:</u>

36,757 or 95 under target

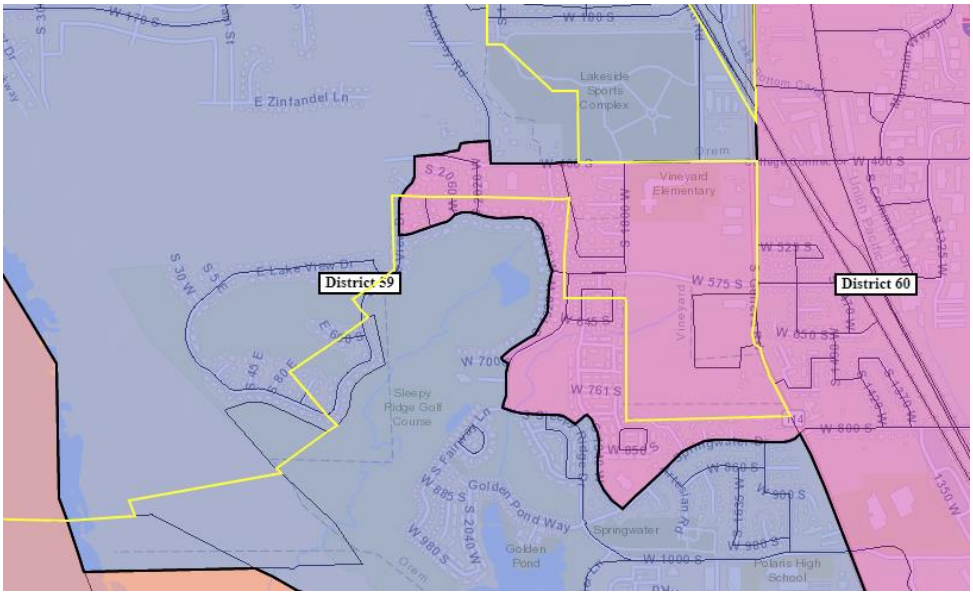

Figure 7 – Current map in Vinyard, Utah.

Hypothetical map of HD 59 and 60

<u>District 59 population:</u>

36,975 or 123 over target

<u>District 60 population</u>:

36,530 or 322 under target

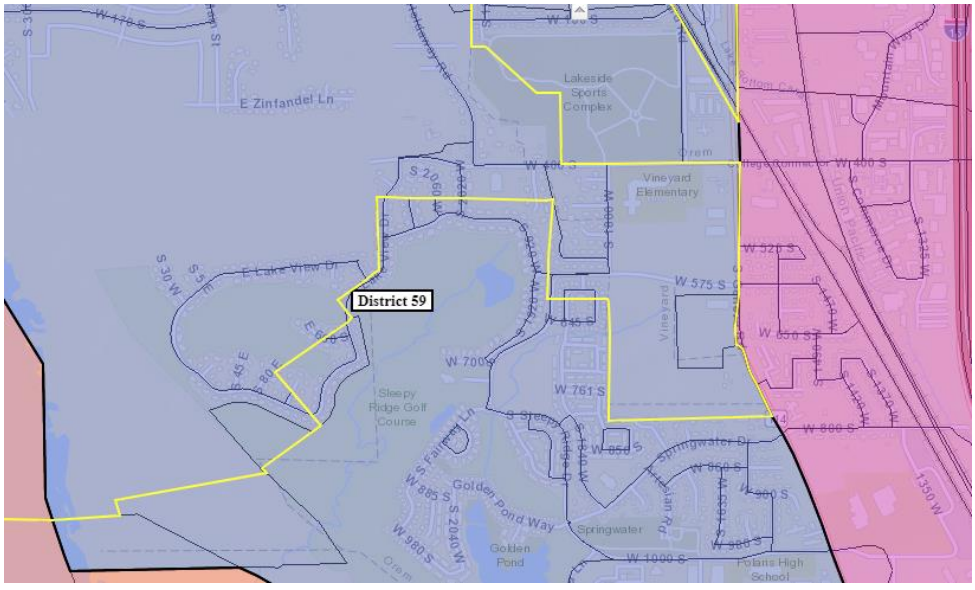

Figure 8 – Hypothetical map in Vinyard, Utah.

References

1. REDISTRICTING REVISIONS, H.B. 413, Utah's 2021 general session. (2021) https://le.utah.gov/~2021/bills/hbillenr/HB0413.pdf

2. U.S. Census Bureau (2020). QuickFacts Utah. Retrieved from https://www.census.gov/quickfacts/UT.

3. 2021 Redistricting Principles. (2021, May 18). https://le.utah.gov/interim/2021/pdf/00002126.pdf.

4. McCann, M., & Williams, B. (2020, January 15). *2010 redistricting Deviation Table*. https://www.ncsl.org/research/redistricting/2010-ncsl-redistricting-deviation-table.aspx.

Appendix

Possible deviations

These tables use 2020 population data and show what the population deviation would be with ten different deviation rates.

The tables also note where the legal maximum (LM), the maximum Redistricting Principles maximum (RP), and the 2011 (11) deviations fall for quicker reference.

LM – Legal maximum

RP – Legislative Redistricting Principles maximum

11- 2011 deviations.

Congressional District Possibilities.
4 Districts – 817,904 Target Population

Deviation Rate (%)		Deviation (Population)	Deviation +/- (Population)
(LM)	1%	8,179	4,089
	0.9%	7,361	3,680
	0.8%	6,543	3,271
	0.7%	5,725	2,862
	0.6%	4,907	2,453
	0.5%	4,089	2,044
	0.4%	3,271	1,635
	0.3%	2,453	1,226
	0.2%	1,635	817
(RP)	0.1%	817	408
(11)	0%	0	0

All numbers rounded down to the nearest integer.

2011 rate was 0.0004%

LM – Legal maximum

RP – Legislative Redistricting Principles maximum

11- 2011 deviations.

State House District Possibilities.
75 Districts – 43,622 Target Population

Deviation Rate (%)		Deviation (Population)	Deviation +/- (Population)
(LM)	10%	4,362	2,181
	9%	3,925	1,962
	8%	3,489	1,744
	7%	3,053	1,526
	6%	2,617	1,308
(RP)	5%	2,181	1,090
	4%	1,744	872
	3%	1,308	654
	2%	872	436
(11)	1%	436	218
	0%	0	0

All numbers rounded down to the nearest integer.

2011 rate was 1.55%

LM – Legal maximum

RP – Legislative Redistricting Principles maximum

11- 2011 deviations.

State Senate District Possibilities.
29 Districts – 112,814 Target Population

Deviation Rate (%)		Deviation (Population)	Deviation +/- (Population)
(LM)	10%	11,281	5,640
	9%	10,153	5,076
	8%	9,025	4,512
	7%	7,896	3,948
	6%	6,768	3,384
(RP)	5%	5,640	2,820
	4%	4,512	2,256
	3%	3,384	1,692
	2%	2,256	1,128
	1%	1,128	564
(11)	0%	0	0

All numbers rounded down to the nearest integer.

2011 rate was 0.39%

LM – Legal maximum

RP – Legislative Redistricting Principles maximum

11- 2011 deviations.

State School Board Possibilities.
15 Districts – 218,108 Target Population

Deviation Rate (%)		Deviation (Population)	Deviation +/- (Population)
(LM)	10%	21,810	10,905
	9%	19,629	9,814
	8%	17,448	8,724
	7%	15,267	7,633
	6%	13,086	6,543
(RP)	5%	10,905	5,452
	4%	8,724	4,362
	3%	6,543	3,271
	2%	4,362	2,181
	1%	2,181	1,090
(11)	0%	0	0

All numbers rounded down to the nearest integer.

2011 rate was 0.002%